

<p align="center">3 FABRIC SEPARATIONS</p>	<p align="center">Page 1 of 2</p>
<p align="center">Division of Forensic Science</p> <p align="center">TRACE EVIDENCE PROCEDURES MANUAL</p>	<p>Amendment Designator:</p>
	<p>Effective Date: 31-March-2003</p>
<p align="center">3 FABRIC SEPARATIONS</p> <p>3.1 Analytical Approach</p> <p>Generally, fabric separation type cases involve two competing explanations offered by the victim and the suspect for the cause of the fabric separation. Each explanation must be tested via simulation experiments. These experiments may also demonstrate that it is not possible to unequivocally choose between opposing scenarios because of limitations inherent in fabric separation identifications.</p> <p>3.2 Fabric Separation Identification</p> <p>3.2.1 Purpose</p> <p>The purpose of fabric separation identification is to determine whether a fabric separation resulted from a cut, tear, puncture or normal wear. Examination of damage to clothing and other textiles may provide valuable information about the possible implement that caused the damage and the manner in which it was caused.</p> <p>3.2.2 Minimum Standards and Controls</p> <p>3.2.2.1 Test fabric separations (cuts, tears, etc.) shall be conducted . Photos or photocopies of the test cuts may be helpful. The article(s) containing the evidence fabric separations shall be used for the test cuts, tears, etc.</p> <p>3.2.2.2 Test fabric separations should be conducted with: an evidence implement (if available) a knife with a sharp blade (new scalpel blade), a knife with a dull blade, scissors and other implements as necessary. Also, the test fabric separations should include an attempt to tear the material by hand.</p> <p>3.2.3 Analytical Procedures</p> <p>3.2.3.1 The following damage may be able to be identified on the basis of macroscopic and microscopic characteristics:</p> <ul style="list-style-type: none"> • Cuts (from knives, scissors, etc.) • Tears • Punctures • Burns • Seam separations • Normal wear <p>3.2.3.2 If a suspected implement (knife, scissors, etc.) is submitted, it shall be examined using a stereo microscope for the presence of textile fibers prior to making any test cuts.</p> <p>3.2.3.3 The textile material is examined macroscopically to determine if there are any damaged areas.</p> <p>3.2.3.4 Note the location, shape and size of all damaged areas.</p> <p>3.2.3.5 Findings of normal wear are noted but are not typically reported unless pertinent to the case.</p> <p>3.2.3.6 All pertinent damaged areas are examined under a low power stereo microscope.</p> <p>3.2.3.6.1 Note whether or not the ends are matted and whether or not there is debris present in the damaged areas.</p> <p>3.2.3.6.2 Other microscopic features such as fiber melting, apparent lead residues, foreign fibers, and glass or paint particles at the separation edge(s) are noted as necessary.</p>	

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3.2.3.7	Test fabric separations conducted on the item should be done as far away as possible from the areas in question and clearly marked as test fabric separations.	
3.2.3.7.1	The examiner attempts to mimic the evidence fabric separations as closely as possible, with each implement used. For example, if the victim stated the suspect tore her clothing to include a seam in the article, the examiner will attempt to tear by a hand, a seam in the same article.	
3.2.3.7.2	The stereomicroscopic appearance of the test fabric separations is compared to that of the evidence fabric separations. The test fabric damage which has the same degree of fiber stretching at the fabric edges as the questioned fabric is the major determining factor in the analysis and what conclusions may be drawn.	
3.2.4	References	
3.2.4.1	Costello, P. A. and Lawton, M. E. - <u>Do stab-cuts reflect the weapon which made them</u> , Journal of Forensic Science Society, 30 (2), 1990, pages 89-95.	
3.2.4.2	Monahan, D. L. and Harding, H.W.J. - <u>Damage to clothing - cuts and tears</u> , Journal of Forensic Sciences, 1990 35, (4): 901 - 912.	
3.2.4.3	Taupin, J. M. - <u>Damage to a wire security screen: Adapting the principles of clothing damage analysis</u> , Journal of Forensic Sciences, 1998; 43 (4): 897 - 900.	
3.2.4.4	Taupin, J. M. - <u>Testing conflicting scenarios - A role for simulation experiments in damage analysis of clothing</u> , Journal of Forensic Sciences, 1998; 43 (4): 891-896.	
3.2.4.5	Taupin, J. M. – <u>Clothing damage analysis and the phenomenon of false sexual assault</u> . Journal of Forensic Sciences, 2000; 45(3): 568-572.	
3.3 Documentation		
3.3.1	The examiner's notes will include a description of the microscopic appearance of the ends of the threads in the damaged areas.	
3.3.2	Photographs or photocopies to document the damage are required.	
3.4 Report Wording Reports may generally be worded as follows:		
3.4.1	A fabric separation was identified:	
3.4.1.1	The fabric separation was consistent with having been cut.	
3.4.1.2	The fabric separation was consistent with having been torn.	
3.4.1.3	The fabric separation was consistent with having been punctured.	
3.4.1.4	The fabric separation was consistent with having been burned.	
3.4.1.5	The fabric separation was consistent with normal wear.	
3.4.2	A fabric separation was not identified:	
No pertinent fabric separations were identified in the _____.		
◆End		